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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/543,092	07/22/2005	Takashi Miyamatsu	70020.0066USWO	4088
23552 7590 06/26/2007 MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			EXAMINER CHU, JOHN S Y	
			ART UNIT 1752	PAPER NUMBER
			MAIL DATE 06/26/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/543,092

Applicant(s)

MIYAMATSU ET AL.

Examiner

John S. Chu

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>7/22/05, 6/13/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office action is in response to the application filed July 22, 2005.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

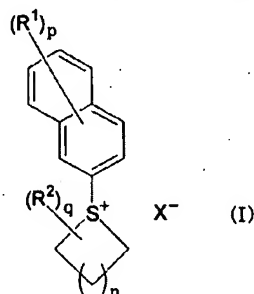
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-8 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by EBATA et al (6,908,722).

The claimed invention is drawn to the following:

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1. A sulfonium salt compound shown by the following formula (I),



- 5 wherein R¹ represents a linear or branched alkyl group having 1-14 carbon atoms, a monovalent hydrocarbon group having an alicyclic skeleton and containing 3-14 carbon atoms, a linear or branched alkoxy group having 1-14 carbon atoms, a group represented by -OR³ (wherein R³ is a monovalent hydrocarbon group having an alicyclic skeleton and containing 3-14 carbon atoms), a linear or branched alkyl sulfanyl
- 10 group having 1-14 carbon atoms, an organic sulfanyl group having an alicyclic skeleton and containing 3-14 carbon atoms, a linear or branched alkane sulfonyl group having 1-14 carbon atoms, or an organic sulfonyl group having an alicyclic skeleton and containing 3-14 carbon atoms, two or more R¹ being either the same or different, R² represents a substituted or unsubstituted, linear, branched, or cyclic alkyl group having
- 15 1-14 carbon atoms, or two or more R² groups bond to form a monocyclic structure having 3-14 carbon atoms or a polycyclic structure having 6-14 carbon atoms, two or more R² groups being either the same or different, p is an integer of 0-7, q is an integer of 0-6, n is an integer of 0-3, and X⁻ represents a sulfonic acid anion.

EBATA et al anticipates the claimed invention in Table 7, Comparative Example 2 wherein the photoacid generator is (a-4) defined in column 74, lines 43-44 for a 1-(4-n-butoxynaphthaleny-1-yl)tetrahydrothiophenium nonafluoro-n-butanesulfonate. This compound anticipates the claimed sulfonium salt as recited in claim 1. In Table 7, column 78, lines 20-25 the photoresist components are disclosed that are used with the sulfonium salt acid generator.

No claims are allowed.

3. Claims 1 and 3-8 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by SUWA et al (6,908,722).

SUWA et al anticipates the invention at Examples 1-8 and 11-13 wherein one of the following are disclosed:

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Acid Generators(A):

(A-1) 4-Hydroxy-1-naphthyltetrahydrothiophenium trifluoromethanesulfonate

(A-2) 4-Methoxy-1-naphthyltetrahydrothiophenium trifluoromethanesulfonate

(A-3) 4-n-Butoxy-1-naphthyltetrahydrothiophenium trifluoromethanesulfonate

(A-4) 4-t-Butoxy-1-naphthyltetrahydrothiophenium trifluoromethanesulfonate

(A-5) 4-n-Butoxy-1-naphthyltetrahydrothiophenium n-nonafluorobutanesulfonate

No claims are allowed.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over EBATA et al (6,908,722) or SUWA et al (6,908,722).

The claimed invention has been recited above and included by reference.

EBATA et al has been recited above for the use of a 1-(4-n-butoxynaphthaleny-1-yl)tetrahydrothiophenium nonafluoro-n-butanesulfonate in Comparative Example 2 in a photoresist composition.

The reference lacks the use of the other sulfonium salts as disclosed in column 17, lines 10-40 wherein heterocyclic sulfonium salts attached to a naphthalene is disclosed. However the listing of the sulfonium compounds are a teaching guide to the skilled artisan that other

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sulfonium salts as listed are suitable for the photoresist composition such that reasonably the same or similar results can be expected if used in a working example.

SUWA et al has been discussed above, however lacks the use of a nonafluorobutanesulfonate anion in a working example as disclosed in column 7, lines 30-42.

It would have been *prima facie* obvious to one of ordinary skill in the art of photoresist composition to use any of the listed sulfonium salts, (i-55) – (i-57) as disclosed in column 17 in a working photoresist composition and reasonably expect same or similar results as recited in EBATA et al for high transparency to deep ultraviolet rays and producing acids with high acidity.

It would have been *prima facie* obvious to one of ordinary skill in the art of photoresist compositions to use any of the listed anions of column 7, lines 30-37 of SUWA et al in the working examples of SUWA et al and reasonably expect same or similar results for high resolution.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. KODAMA (2005/0287473) and (2005/0266336) disclose sulfonium salts, which meet the claimed invention, however are not prior art in view of the filing dates.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (571) 272-1329. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Cynthia Kelly, can be reached on (571) 272-1526

The fax phone number for the USPTO is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PMR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/John S. Chu/
Primary Examiner, Group 1700

J.Chu
June 21, 2007